Chapter 1
Network Management Overview

Once you have installed the router into your network, you need to manage the router within your network. Router management can be divided into five tasks:

Fault management—Monitor the router; detect and fix faults.

Configuration management—Configure router attributes.

Accounting management—Collect statistics for accounting purposes.

Performance management—Monitor and adjust router performance.

Security management—Control router access and authenticate users.

The JUNOS Internet software network management features work in conjunction with an operations support system (OSS) to manage the router within the network. The JUNOS software can assist you in performing these management tasks, as described in Table 2:

Table 2: JUNOS Router Management Features

Task	JUNOS Software Feature
Fault management	Monitor and see faults using:
	Operational mode commands—For more information on operational mode commands, see the *JUNOS Internet Software Operational Mode Command Reference*.
	SNMP MIBs—For more information about SNMP MIBs, see "Juniper Networks Enterprise-Specific MIBs" on page 53.
	Standard SNMP traps—For more information about standard SNMP traps, see "Standard SNMP Traps" on page 73.
	Enterprise-specific SNMP traps—For more information about enterprise-specific traps, see "Juniper Networks Enterprise-Specific SNMP Traps" on page 57.
	System log messages— For more information about how to configure system log messages, see the *JUNOS Internet Software Configuration Guide: Getting Started.* For more information about how to view system log messages, see the *JUNOS Internet Software System Log Messages Reference*.
Configuration management	Configure router attributes using the command-line interface (CLI) and the JUNOScript API. For more information on configuring the router using the CLI, see the *JUNOS Internet Software Configuration Guide: Getting Started*. For more information on configuring the router using the JUNOScript API, see the *JUNOScript API Reference* and the *JUNOScript API Guide*.
	Configuration Management MIB—For more information about the Configuration Management MIB, see "Juniper Networks Enterprise-Specific MIBs" on page 53.

Task	JUNOS Software Feature
Accounting management	Perform the following accounting-related tasks:
	Collect statistics for interfaces, firewall filters, destination classes, source classes, and the Routing Engine. For more information on collecting statistics, see "Configure Accounting Options" on page 225.
	Use interface-specific traffic statistics and other counters, available in the standard interfaces MIB, Juniper Networks enterprise-specific extensions to the interfaces MIB, and media-specific MIBs, such as the enterprise-specific ATM MIB.
	Use per ATM virtual circuit (VC) counters, available in the enterprise-specific ATM MIB.
	Group source and destination prefixes into source classes and destination classes, respectively, and count packets for those classses. Collect destination class and source class usage statistics. For more information on classes, see "Juniper Networks Enterprise-Specific MIBs" on page 53, "Configure Class Usage Profiles" on page 240, the *JUNOS Internet Software Configuration Guide: Interfaces and Class of Service*, and the *JUNOS Internet Software Configuration Guide: Policy Framework.*
	Count packets as part of a firewall filter. For more information on firewall filter policies, see "Juniper Networks Enterprise-Specific MIBs" on page 53, and the *JUNOS Internet Software Configuration Guide: Policy Framework.*
	Sample traffic, collect the samples, and send the collection to a host running the CAIDA cflowd utility. For more information on CAIDA and cflowd, see the *JUNOS Internet Software Configuration Guide: Policy Framework*.
Performance management	Monitor performance in the following ways:
	Use operational mode commands. For more information on monitoring performance using operational mode commands, see the *JUNOS Internet Software Operational Mode Command Reference*.
	As part of a firewall filter. For more information on performance monitoring using firewall filters, see the *JUNOS Internet Software Configuration Guide: Policy Framework.*
	Sample traffic, collect the samples, and send the samples to a host running the CAIDA cflowd utility. For more information on CAIDA and cflowd, see the *JUNOS Internet Software Configuration Guide: Policy Framework*.
	Use the enterprise-specific class-of-service MIB. For more information on this MIB, see "Juniper Networks Enterprise-Specific MIBs" on page 53.
Security management	Assure security in your network in the following ways:
	Control access to the router and authenticate users. For more information on access control and user authentication, see the *JUNOS Internet Software Configuration Guide: Getting Started.*
	Control access to the router using SNMPv3 and SNMP over IPv6. For more information, see "Configure SNMPv3" on page 28 and "Trace SNMP Activity" on page 31.